

Claims:

1. An apparatus for storing , retrieving, organizing, and updating medical records and other vital personal information from bodily worn storage devices, comprising:

a bodily worn storage device, storage card, or storage disk capable of storing high capacity digital medical records and other vital personal emergency information of the user/wearer.

a portable field unit with a unique interface wand capable of retrieving digital patient records and information from the bodily worn device and transmitting said digital information by contact or wireless means in a medical emergency or other type of emergency situation.

a base unit capable of receiving said digital medical records and information and organizing them into readable and medically significant information for emergency medical treatment options

a patient monitor module for interfacing the wireless critical patient information and data with a plurality of existing emergency room patient monitoring models and devices as a add on, plug in device option.(makes the module and technology portable from monitor to monitor as a plug in device).

software for digitizing, prioritizing, organizing, displaying said critical patient information in page formats for emergency medical treatment and other applications and usage

software for controlling the organization, prioritization, data flow and logic of the system comprising: the portable field unit, the patient monitoring module, the base unit, the interface wand and bodily worn storage devices.
Reference figures 7, 8, and 9

a means, through either contact or wireless non-contact, of sending electrical power from the interface wand to the Bodily worn device, storage card or storage disk, while simultaneously sending and receiving digital data to the Bodily worn device, storage card or storage disk.

2 The apparatus of claim 1 wherein the interface wand is capable of capturing said digital medical records by non-contact optical or wireless means. Reference Reeves 6,467,690 and application 09/578,664

3. The apparatus of claim 1 wherein the bodily worn device is capable of transmitting or receiving said digital medical records from the interface wand by non-contact optical or wireless means.
4. The apparatus of claim 1 wherein the portable field unit is capable of receiving, storing and displaying, in a unique weighted average priority, said medical records on a lighted display screen via the interface wand.
5. The apparatus of claim 1 wherein the portable field unit is capable of wireless transmission of the said digital medical records to said base unit, using the Internet, e-mail or other appropriate digital communications means
6. The apparatus of claim 1 wherein the portable field unit is programmed with software to allow for the organization and display of said digital medical data in a unique weighted average priority manner Reference figure 7 and 8 and said descriptions.
7. The apparatus of claim 1 wherein the interface wand is capable of transmitting or receiving wireless digital information from the said bodily worn device using optical or other wireless- non contact means. Reference Reeves 6,467,690
8. The apparatus of claim 1 wherein the base unit is capable of receiving said digital records in a wireless fashion, in either synchronous or asynchronous radio frequency transmission
9. The apparatus of claim 1 wherein the base unit is capable of storing and organizing the medical records and critical information into prioritized pages for display and viewing, wherein said prioritization is based on a weighted average (or other calculation means) of the clinical severity of the pre-existing medical conditions of said user and the probability of the clinical utility of said medical records in treating the pre-existing medical conditions in order of most severe to least severe.
10. The apparatus of claim 1 wherein the base unit contains software for the logic control of receiving said digital records, organizing said records in priority fashion and displaying said prioritized records on the display screen. Reference figures 7 and 8
11. The apparatus of claim 1 wherein the base unit is capable of archiving and storing multiple digital patient records for retrieval and review.

12. The apparatus of claim 1 wherein the patient module is capable of interfacing with an existing emergency room patient monitor and receiving said wireless transmission of said medical records for display on said existing patient monitor in an emergency situation.

13. The apparatus of claim 1 wherein the slave patient module contains an interface Printed circuit board with electronic contact pads, or other suitable means, for receiving power to the module board from the master module and for transmitting and receiving said digital patient medical records, from the master monitor. The module is a portable plug and play device with no dedicated power or data sources of its own and therefore it is a slave to the monitor it is plugged into and receives power and data through the contact pads.

14. The apparatus of claim 1 wherein the patient module contains an interface wand and electronic cable for capturing said digital records from 3 said bodily worn device, using non-contact wireless means, and transmitting said records to the patient monitor for storage and display.

15. The apparatus of claim 1 wherein the system contains common software and logic for the seamless storage, wireless transmission, receiving, prioritizing, creation of readable pages and displaying of said pages on a computer screen, patient monitor screen or other appropriate display device. Reference figures 7 and 8.

16. The apparatus of claim 1 wherein the digital data stored in the bodily worn device, storage card or storage disk is encrypted for security and medical confidentiality and such encrypted data is organized and originates in the base unit of the apparatus or an appropriate satellite computer.

17. The apparatus of claim 1 wherein the apparatus performs a sum check operation on the digital data when it is either read from the storage device or written to the storage device to verify the sum of all digital information matches a pre-calculated sum to verify that all digital data is present, complete, and uncorrupted.

18. The apparatus of claim 1 wherein the digital memory storage capacity of patient medical records stored in the bodily worn device, storage card or storage disk is capable of storing a clinically significant amount of medical records and data to treat chronically ill patients. Such data shall include the most current physician examination, current prescriptions, current EKG, blood and urine analysis, a listing of implanted devices, a photo ID, condensed medical history and living will and organ donor instructions. Memory storage capacity within Reeves 6,467,690 is cited as an example.

19. The apparatus of claim 1 wherein the bodily worn device, storage card, and storage disk do not require any on board battery or electrical power source and said electrical power is supplied simultaneous with data reading and writing via non contact optical, inductance or other appropriate non contact means, and data is transferred to and from the storage device in an asynchronous manner. Reference Reeves 6,467,690 and Reeves application 09/578,664

20. The apparatus of claim 1 wherein the monitor module is arranged in hardware and electronics to be a plug in or adaptive device to an existing patient monitor, making use of said existing monitor's data display, computer, operating software, and electrical power source to save space and cost.

21. The apparatus of claim 1 wherein the patient medical records stored in 2 the bodily worn device and storage card and based unit are organized in page format and prioritized based on a weighted average of the most severe pre-existing medical condition and the relative clinical utility of the data in reference to treating a patient in a medical emergency for the most positive medical outcome. Reference Reeves application 09/xxxxxxx

22. The apparatus of claim 1 wherein the digital patient data is organized in pre-arranged data arrays and with digital markers (addresses) where said addresses are consistently in used in all hardware of the apparatus (bodily worn device, potable field unit, base unit and interface module) so as to consistently display all data in a standard page format in prearranged data fields to save digital memory space and to reduce computer processing time.

23. The apparatus of claim 1 wherein said bodily worn device, storage card or storage disk is permanently embedded with a digital alphanumeric security marker and the apparatus searches for and recognizes said marker each time data is written to or read from the bodily worn device or storage card. Said system is capable of rejecting unauthorized devices from communicating with the system if said devices do not have said security marker.

24. The apparatus of claim 1 wherein all the hardware components of said system: bodily worn device, storage card, interface wand, portable field unit, interface module and base unit, are capable of two data communications and two way data transmission and reception.

25. The apparatus of claim 1 wherein the bodily worn device, portable field unit and storage disk are encased in weatherproof, rugged and hermetically sealed enclosures and said enclosure is shielded from radio frequency interference.

26. The apparatus of claim 14 wherein the wireless non contact transfer of digital data is accomplished via a radio frequency carrier signal. Reference Reeves US patent 6,467,690.

27. The apparatus of claim 1 wherein the portable field unit , base module and interface module are capable of transmitting and receiving patient records via the Internet or e-mail via wire, optical or wireless communication. Reference Reeves application 09/xxxxxx.

28. The apparatus of claim 1 wherein the high capacity storage card as shown in figure 6 is of the preferred embodiment described in Reeves 6,467,690.

29 The apparatus of claim 1 and claim 19 wherein the data storage devices show in fig 6 contain the means of mechanical alignment via slot or tabs so as to facilitate the alignment of the non-contact optical data transmission sensors . Reference Reeves 6,467,690.

30. A method for storing , retrieving, organizing, and updating medical records and other vital personal information from bodily worn storage devices, comprising:

a bodily worn storage device, storage card, or storage disk capable of storing high capacity digital medical records and other vital personal emergency information of the user/wearer.

a portable field unit with a unique interface wand capable of retrieving digital patient records and information from the bodily worn device and transmitting said digital information by contact or wireless means in a medical emergency or other type of emergency situation.

a base unit capable of receiving said digital medical records and information and organizing them into readable and medically significant information for emergency medical treatment options

a patient monitor module for interfacing the wireless critical patient information and data with an existing emergency room patient monitoring device

software for digitizing and organizing and displaying said critical patient information in page formats for emergency medical treatment and other applications and usage

software for controlling the internal logic of the portable field unit and the

patient monitoring module and the base unit.

a means, through either contact or wireless non-contact, of sending electrical power from the interface wand to the Bodily worn device, storage card or storage disk, while simultaneously sending and receiving digital data to the Bodily worn device, storage card or storage disk.

31 The method of claim 30 wherein the interface wand is capable of capturing said digital medical records by non-contact optical or wireless means. Reference Reeves 6,467,690 and application 09/xxxxxx

32. The method of claim 30 wherein the bodily worn device is capable of transmitting or receiving said digital medical records from the interface wand by non-contact optical or wireless means.

33. The method of claim 30 wherein the portable field unit is capable of receiving, storing and displaying said medical records on a lighted display screen via the interface wand.

34. The method of claim 30 wherein the portable field unit is capable of wireless transmission of the said digital medical records to said base unit, using the Internet, e-mail or other appropriate digital communications means

35. The method of claim 30 wherein the portable field unit is programmed with software to allow for the organization and display of said digital medical data. Reference figure 7 and 8 and said descriptions.

36. The method of claim 30 wherein the interface wand is capable of transmitting or receiving wireless digital information from the said bodily worn device using optical or other wireless- non contact means. Reference Reeves 6,467,690

37. The method of claim 30 wherein the base unit is capable of receiving said digital records in a wireless fashion, in either synchronous or asynchronous radio frequency transmission

38. The method of claim 30 wherein the base unit is capable of storing and organizing the medical records and critical information into prioritized pages for display and viewing, wherein said prioritization is based on a weighted average (or other calculation means) of the clinical severity of the pre-existing medical conditions of said user and the probability of the clinical utility of said medical records in treating the pre-existing medical conditions in order of most severe to least severe.

39. The method of claim 30 wherein the base unit contains software for the logic control of receiving said digital records, organizing said records in priority fashion and displaying said prioritized records on the display screen. Reference figures 7 and 8

40. The method of claim 30 wherein the base unit is capable of archiving and storing multiple digital patient records for retrieval and review.

41. The method of claim 30 wherein the patient module is capable of interfacing with an existing emergency room patient monitor and receiving said wireless transmission of said medical records for display on said existing patient monitor in an emergency situation.

42. The method of claim 30 wherein the patient module contains an interface Printed circuit board with electronic contact pads, or other suitable means, for transmitting power to the module board and for transmitting and receiving said digital patient medical records.

43. The method of claim 30 wherein the patient module contains an interface wand and electronic cable for capturing said digital records from said bodily worn device, using non-contact wireless means, and transmitting said records to the patient monitor for storage and display.

44. The method of claim 30 wherein the digital data stored in bodily worn device, storage card or storage disk is encrypted for security and medical confidentiality and such encrypted data is organized and originates in the base unit of the apparatus or an appropriate satellite computer.

45. The method of claim 30 wherein the apparatus performs a sum check operation on the digital data when it is either read from the storage device or written to the storage device to verify the sum of all digital information matches a pre-calculated sum to verify that all digital data is present, complete, and uncorrupted.

46. The method of claim 30 wherein the digital memory storage capacity of patient medical records stored in the bodily worn device, storage card or storage disk is capable of storing a clinically significant amount of medical records and data to treat chronically ill patients. Such data shall include the most current physician examination, current prescriptions, current EKG, blood and urine analysis, a listing of implanted devices, a photo ID, condensed medical history and living will and organ donor instructions. Memory storage capacity within Reeves 6,467,690 is cited as an example.

47. The method of claim 30 wherein the bodily worn device, storage card, and storage disk do not require any on board battery or electrical power source and said electrical power is supplied simultaneous with data reading and writing via non contact optical, inductance or other appropriate non contact means, and data is transferred to and from the storage device in an asynchronous manner. Reference Reeves 6,467,690 and Reeves application 09/xxxxxx

48. The method of claim 30 wherein the monitor module is arranged in hardware and electronics to be a plug in or adaptive device to an existing patient monitor, making use of said existing monitor's data display, computer, operating software, and electrical power source to save space and cost.

49. The method of claim 30 wherein the patient medical records stored in the bodily worn device and storage card and based unit are organized in page format and prioritized based on a weighted average of the most severe pre-existing medical condition and the relative clinical utility of the data in reference to treating a patient in a medical emergency for the most positive medical outcome. Reference Reeves application 09/xxxxxx

50. The method of claim 30 wherein the digital patient data is organized in pre-arranged data arrays and with digital markers (addresses) where said addresses are consistently in used in all hardware of the apparatus (bodily worn device, portable field unit, base unit and interface module) so as to consistently display all data in a standard page format in prearranged data fields to save digital memory space and to reduce computer processing time.

51. The method of claim 30 wherein bodily worn device, storage card or storage disk is permanently embedded with a digital alphanumeric security marker and the apparatus searches for and recognizes said marker each time data is written to or read from the bodily worn device or storage card. Said system is capable of rejecting unauthorized devices from communicating with the system if said devices do not have said security marker.

52. The method of claim 30 wherein all the hardware components of said system: bodily worn device, storage card, interface wand, portable field unit, interface module and base unit, are capable of two data communications and two way data transmission and reception.

53. The method of claim 30 wherein the bodily worn device, portable field unit and storage disk are encased in weatherproof, rugged and hermetically sealed enclosures and said enclosure is shielded from radio frequency interference.

54. The method of claim 36 wherein the wireless non contact transfer of digital data is accomplished via a radio frequency carrier signal. Reference Reeves US patent 6,467,690.

55. The method of claim 30 wherein the portable field unit , base module and interface module are capable of transmitting and receiving patient records via the Internet or e-mail via wire, optical or wireless communication. Reference Reeves application 09/xxxxxx.

56. The method of claim 30 wherein the high capacity storage card as shown in figure 6 is of the preferred embodiment described in Reeves 6,467,690.

57 The method of claim 30 and claim 47 wherein the data storage devices show in fig 6 contain the means of mechanical alignment via slot or tabs so as to facilitate the alignment of the non-contact optical data transmission sensors , Reference Reeves 6,467,690.